

THE CLAIMS:

1. A support for supporting a structure on a surface, the support comprising at least one support element, the
5 or each support element comprising:

a piston,
a cylinder in which the piston is moveable, and
a braking means for maintaining the piston in a
position that is stable relative to the cylinder,
10 wherein the piston and the cylinder are arranged so
that a loading associated with the structure effects an
adjustment of the support element,
and wherein an increase in hydraulic pressure within
the cylinder, effected by the loading associated with the
15 structure, activates the braking means.

2. A support as claimed in claim 1 wherein the cylinder
has a fluid inlet/outlet and is arranged so that an amount
of fluid flowing through the or each inlet/outlet controls
20 the movement of the or each piston relative to the or each
cylinder.

3. A support as claimed in claim 2 wherein the movement
of the or each piston effects a movement of a surface
25 contact portion of the or each support element relative to
the surface.

4. A support as claimed in claim 3 comprising at least
two support elements, each of the support elements having
30 a surface contact portion and wherein the fluid
inlet/outlets are interconnected by at least one fluid
conduit so that the fluid can flow between the
inlet/outlets.

5. A support as claimed in claim 4 being arranged so that in use, when the support is placed on the surface and at least one of the surface contact portions does not 5 contact the surface, a movement of the pistons relative to the cylinders is effected that adjusts the positions of the surface contact portions relative to the surface.

6. A support as claimed in claim 5 wherein each piston 10 comprises the surface contact portion arranged to contact the surface.

7. A support as claimed in claim 5 wherein the surface contact portion is a component that is either in direct or 15 indirect contact with the piston.

8. A support as claimed in any one of claims 5 to 7 being arranged so that the pistons move relative to the cylinders, until an increase of fluid pressure in the 20 cylinders actuates the braking means.

9. A support as claimed in any one of claims 5 to 8 wherein the braking means of each support element is hydraulic.

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10. A support of claim 9 wherein the piston of each support element has a cavity arranged so that in use fluid can penetrate from the inlet/outlet into the cylinder and into the cavity.

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11. A support as claimed in claim 10 wherein the piston of each support element is elongate and at least one side

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portion has at least one recess that is linked to the cavity.

12. A support as claimed in claim 11 wherein a brake-pad 5 or brake-cylinder is positioned in the or each recess of the piston and arranged so that if fluid penetrates into the cavity the or each brake-pad or brake-cylinder is in use moved towards an interior wall of the cylinder.

10 13. A support as claimed in claim 12 wherein the braking means is arranged so that an increase of the fluid pressure in the cavity increases the pressure of the or each brake-pad or brake-cylinder against the interior wall of the cylinder and thereby acts against the moveability 15 of the piston in the cylinder.

14. A support as claimed in claim 9 wherein the cylinder has at least one recess in an interior side wall and at least one brake pad or brake cylinder is positioned in the 20 or each recess of the interior side wall and arranged to push against the piston to act against the moveability of the piston in the cylinder.

15. A support as claimed in any one of claims 5 to 8 25 wherein the braking means of each support element is mechanical.

16. A support as claimed in claim 15 comprising a brake portion which is moveable relative to the cylinder and 30 with the piston until the movement of the surface contact portion is restricted.

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17. A support as claimed in claim 16 wherein the brake portion is arranged so that, when the movement of the brake portion is restricted, a further movement of the piston relative to the cylinder activates the braking means.

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18. A support of claim 17 wherein the braking means has wedging portions which in use effect a movement of the brake portion against an interior wall of the cylinder.

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19. A support as claimed in any one of the preceding claims having three support elements.

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20. A support as claimed in any one of claims 1 to 18 having four support elements.

21. A support as claimed in any one of the preceding claims wherein the structure is a furniture item.

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22. A support as claimed in any one of the preceding claims wherein the structure is a table.

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23. A support as claimed in any one of claims 1 through 8, wherein the braking means is situated between two or more support elements and comprises at least two fluid reservoirs adapted such that when the pressure in at least one fluid reservoir is below a threshold level the fluid reservoirs are in fluid communication and when the pressure in at least two fluid reservoirs is above a threshold level the fluid reservoirs are not in fluid communication.

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24. A support as claimed in claim 23 further comprising a valve disposed between the fluid reservoirs.

25. A support as claimed in claim 24, wherein the valve
5 comprises:

a ceramic disk disposed between the reservoirs, the ceramic disk including at least one reservoir aperture;

at least two pistons, each piston being associated with a reservoir, each piston including a piston aperture, 10 each piston being biased such that when the pressure in any reservoir is below a threshold level the piston aperture aligns with the reservoir aperture allowing fluid to flow therethrough and when the pressure in all reservoirs is above a threshold level the piston.

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26. A support as claimed in claim 24, wherein the valve comprises:

at least two sealing elements, each sealing element being associated with a reservoir, wherein the sealing 20 elements are shaped such that a change in pressure results in relative movement of the sealing elements with respect to one another such that if the pressure in all reservoirs is above a threshold level the sealing elements abut, preventing fluid flow between the reservoirs.

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27. A support as claimed in claim 26, wherein the sealing elements are composed of gel.

28. A support as claimed in claim 27, wherein the sealing 30 elements are pistons.

29. A support as claimed in claim 28 wherein the pistons are disposed between membranes.

30. An adjustable support for supporting a structure on an underlying surface, the support comprising a piston cylinder assembly, the piston being moveable relative to 5 the cylinder with one of the piston or cylinder being connected to, or forming part of, the structure and the other being associated with a contact portion operative to engage the underlying surface, and braking means for inhibiting movement of the piston relative to the 10 cylinder, wherein the braking means is operative in response to the application of predetermined loading conditions to a portion of the support.

31. An adjustable support according to claim 30 wherein 15 the braking means is operative in response to a threshold loading being applied to that portion of the piston cylinder assembly that is associated with the contact portion.

20 32. A braking system for a piston and cylinder assembly, the braking system comprising a braking means adapted to be actuated by an increase in fluid pressure within the cylinder.

25 33. A braking system as defined in claim 32, wherein the piston has a cavity arranged so that in use fluid can penetrate from an inlet/outlet into the cylinder and into the cavity and wherein at least one side portion of the piston has at least one recess that is linked to the 30 cavity.

34. A braking system as defined in claim 33, wherein a brake-pad or brake-cylinder is positioned in the or each

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recess of the piston and arranged so that if fluid penetrates into the cavity the or each brake-pad or brake-cylinder is in use moved towards an interior wall of the cylinder.

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35. A braking system as defined in claim 34, wherein the braking means is arranged so that an increase of the fluid pressure in the cavity increases the pressure of the or each brake-pad or brake-cylinder against the 10 interior wall of the cylinder and thereby acts against the moveability of the piston in the cylinder.

36. A braking system as defined in claim 32, further including a fluid chamber within the cylinder, a piston 15 plate positioned between the piston and the fluid chamber, and a cavity between the piston and the piston plate, the cavity containing:

resistance means such that in use the piston and piston plate are retained in a distal position relative to 20 one another and on an increase in fluid pressure within the fluid chamber the piston and piston plate move proximal to one another;

at least one inlet/outlet extension extending through at least a portion of the cavity so that in use fluid can 25 flow through the inlet/outlet extension and into the cylinder;

means for disrupting the flow of fluid through the inlet/outlet extension and into the cylinder upon an increase in fluid pressure within the cylinder.

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37. A braking system as defined in claim 36, wherein the resistance means comprises a spring.

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38. A braking system as defined in claim 36, wherein the resistance means comprises a fluid-filled bladder.

39. A braking system as defined in any one of claims 36
5 to 38, wherein the inlet/outlet extension comprises a tube
extending through the cavity and into the cylinder.

40. A braking system as defined in claim 39, wherein the
tube is flexible and at least one of the piston plate and
10 piston comprises crimpers extending into the cavity such
that when the fluid pressure in the cylinder increases and
the piston plate and piston move proximal to one another
the crimpers compress the flexible tube and disrupt fluid
flow into the cylinder.

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41. A braking system as defined in claim 39, wherein the
tube includes a valve such that when the fluid pressure in
the cylinder increases and the piston plate and piston
move proximal to one another the valve disrupts fluid flow
20 through the tube and into the cylinder.

42. A braking system as defined in claim 41, wherein the
valve is a ball valve.

25 43. A braking system as defined in claim 39, wherein the
tube includes a first member extending therethrough and
the cavity contains a second member, the first member
including a flow aperture to allow fluid penetration
through the tube, the second member being adapted to move
30 between an open position and a closed position such that
in the closed position the flow aperture is blocked by the
second member, disrupting fluid penetration through the
tube and into the cylinder.

44. A braking system as defined in claim 43, wherein the first member and second member are each ceramic disks.

5 45. A braking system as defined in any of claims 36 to 44, wherein the inlet/outlet extension comprises a helical flexible tube portion extending through at least a portion of the cylinder.

10 46. A support for supporting a structure on a surface, the support comprising at least one support element, the or each support element comprising:

15 a piston,
a cylinder in which the piston is moveable, and
a braking means for maintaining the piston in a position that is stable relative to the cylinder,
wherein the piston and the cylinder are arranged so that a loading associated with the structure effects an adjustment of the support element,

20 and wherein the loading associated with the structure activates the braking means if the moveability of a surface contact portion of the support element is reduced below a threshold value.